### **DRAFT**

(This document is a work in progress – Your feedback and comments are encouraged)

# TC EDI

### ELECTRONIC DATA INTERCHANGE SOFTWARE FOR THE TOTAL COLIFORM RULE KENTUCKY DRINKING WATER BRANCH

What is TC\_EDI? TC\_EDI is an MS-Access application that provides laboratories a method for entering and storing bacteriological sampling results in an Access database and subsequently transforming that data into a specially formatted text file that can be electronically transmitted to the Kentucky Drinking Water Branch (DWB). Public Water Supplies are required to submit the results of bacteriological sampling in accordance with the Total Coliform Rule.

This program was originally developed by the Illinois EPA and has been modified and adapted by DWB for use by Kentucky laboratories wishing to participate in electronic submission of bacteriological data. The software is provided free of charge and without warranty of any sort. Users with an intermediate to advanced level of skill with Access and Visual Basic are free to change or modify the program to suit particular needs and preferences. However, care must be taken to insure that the structure of the resulting text files is not disrupted. Developers should also be aware that by-passing any of the built-in validation checks could result in the rejection of records when the text file is loaded to the DWB database.

The software has been extensively tested prior to this initial release but as with all newly developed software, it is anticipated that bugs will likely be discovered overtime as the number of users increases. If you encounter problems in the use of this software or wish to report a suspected bug you are invited to contact me at <a href="mailto:stephen.poreda@ky.gov">mailto:stephen.poreda@ky.gov</a> Please thoroughly review all accompaning documentation before using the software.

How It Works. A Brief Overview. A user proceeds from the opening screen (SwitchBoard) by clicking on the "Enter New Sample Data or View Batch File" button. The main data entry screen appears and sample results can then be entered. Clicking any of the three command buttons at the bottom of the screen causes the newly entered data to be inserted into the two tables **tblSample** and **tblResults**. After entering a number of samples and results the user can close the form and return to the SwitchBoard. The user can then click on "Create Text File for DWB from Batch File" and the text file is created from the contents of these two tables. Following creation of the text file, the user can click on "Copy Records to History and Delete Batch File". The records are then copied to the History table, **tblActivity**, and the tblSample and tblResults records are removed. After closing the TC\_EDI application, the text file must be renamed (see following section) and can be e-mailed to DWB. We will be setting up a dedicated e-mail account to receive the text files in the near future. In the meantime, files can be sent to mailto:jerry.pike@ky.gov

#### **Some Important Notes:**

(These Notes are supplemental to information contained in the section of this document titled "Instructions for Coliform Enty Screen)

#### **Sampling Points**

The Sampling Points shown the Sampling Point dropdown box are contained in the table **tblFacCodes** in your TC EDI database. The column "Facility Code" corresponds to the PWSID. The column "Water Facility State Code" is the code designating the water system's distribution system and is required in the submitted text file for acceptance into DWB's database (SDWIS). "Sampling Location" is the address (or other physical description) corresponding to the "Sampling Point". "Activity Status ID" indicates that a Sampling Point is active or available for use. Your TC EDI database can be delivered with all the Sampling Points for all water systems or for only those systems you request. The list of valid Sampling Points is extracted from Sampling Points in SDWIS and includes only sampling locations associated with a distribution system and that have been approved by DWB for bacteriological sampling. Sample results submitted in electronic text files must have a Sampling Point and Facility Code that matches an existing Sampling Point in SDWIS or the record will be rejected. Water systems should be advised that it is the responsibility of the PWS to keep a current and updated Sampling Site Plan on file with DWB. DWB intends to update Sampling Points in its database on an ongoing basis and make updated lists available to laboratories through the DWB website. The downloaded files can be used to replace the contents of tblFacCodes in your TC EDI database.

#### **Repeat Samples**

To enter a Repeat Sample the user navigates to the "Sample Purpose" dropdown box and selects "Repeat". The Location Indicator dropdown box then appears and the user must select one of the location indicators. Following that, the user is next prompted for an Original Lab Sample Number. This is required for all Repeat Samples. The focus then moves to "Sampling Point". If the Location Indicator is "OR" then the user should select the Sampling Point that corresponds to the Sampling Point on the original positive sample. Since upstream (UP) and downstream (DN) Sampling Points are unlikely to be present in the DWB database, the user should select an appropriate generic Repeat Sampling Point (eg. RPU or RPD). In the event that a sample is a repeat of a positive repeat and the original positive repeat was at a location other than the original (ie. the positive repeat was at the Downstream location), then the user should select the generic Sampling Point "RPO" to indicate the site of the original positive repeat.

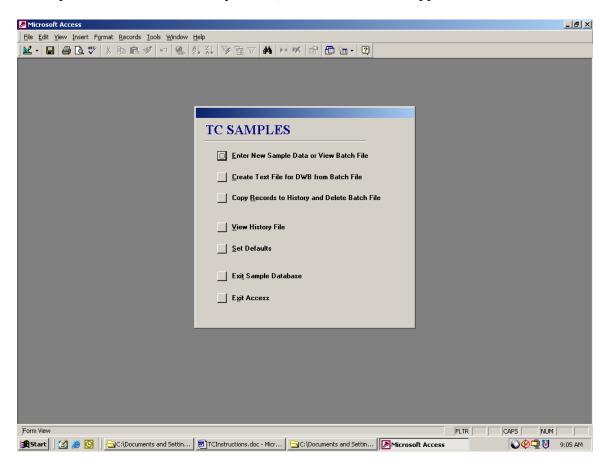
A potential problem can occur when the user has finished entry of a Repeat Sample and clicks on "Another Sample – Same Form" in order to enter a second Repeat. The focus moves to the Sampling Point dropdown box while the Location Indicator and Original Lab Sample Number remain unchanged. It is important to remember to change the Location Indicator (for the second Repeat Sample) before proceeding to enter the third sample. Once a set of 3 repeats has been entered for a particular positive original it is advisable to click on "New Lab Form" before entering any additional samples. This will clear "Sample Purpose" and "Original Lab Sample Number" from the screen and avoid the possibility of incorrectly associating any subsequent samples with a positive Original Lab Sample Number.

## **Special Samples**

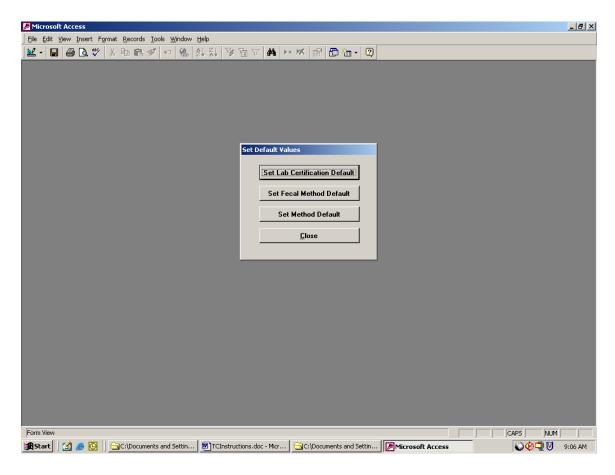
Special Sample (Sample Type "SP") are not considered in determinations of compliance. It is not expected that Sampling Points for Special Samples will be present in the SDWIS database. If the Sampling Point for a Special Sample is not present in your TC\_EDI database you should select the generic Sampling Point "SPG" to avoid likely rejection.



When you load this database on your PC, the first screen that appears is:



### Click on Set Defaults

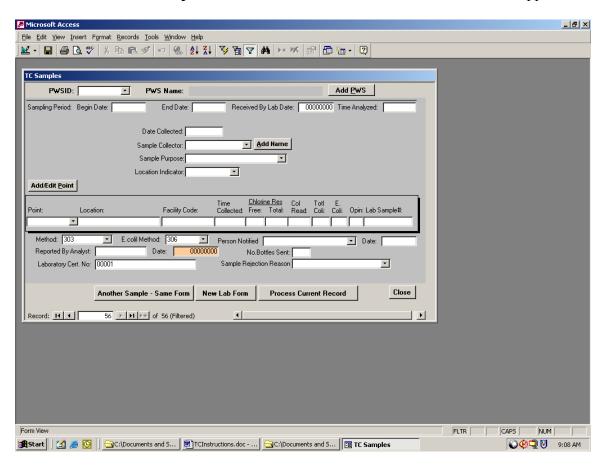


Set a default for the Lab you'll be using. This is the State assigned certification number for your lab.

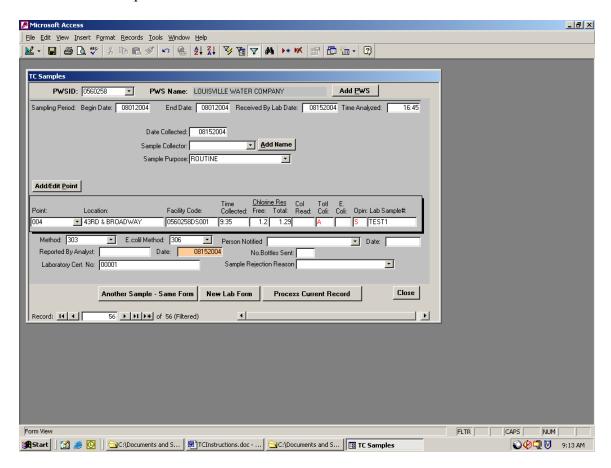
Set a Fecal Method Default and set a Method Default.

Return to the Main Menu by clicking Close.

Click on Enter New Sample Data or View Batch File. This screen will then appear.



#### Enter the TC Sample Data:



If you have additional samples for the PWSID, click **Another Sample-Same Form** and enter additional results.

If you have more samples but for a different PWSID and/or Collection Date, click on **New Lab Form**.

If you are on your last record for this batch of samples, click **Process Current Record**.

# DO NOT CLICK ON ONE OF THESE (3) BUTTONS MORE THAN ONCE or duplicate records get created.

When you click on one of these buttons, the current record on the screen is added to the tables **tblSample** and **tblResults**. These two tables are used to create the text file Sample.txt

Click **Close** to return to the Main Menu.

Create a folder under your C: directory called SDWIS and another folder under SDWIS called EDI\_Data. The text file that gets created will be created here and be named Sample.txt.

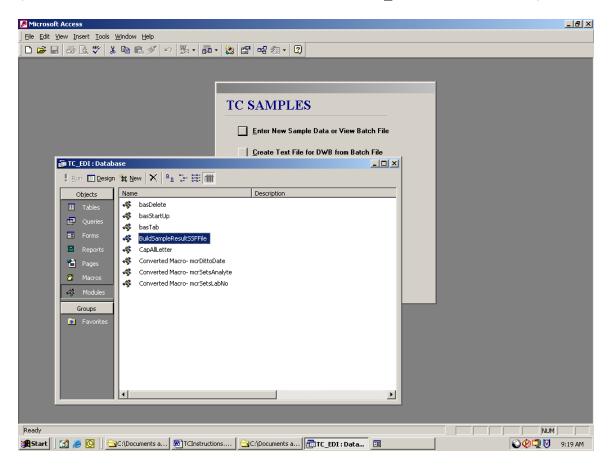
When all data has been entered, you may click on **Create Text File For DWB from Batch File** from the Main Menu.

When this is clicked the text file will be created under your C:\SDWIS\EDI\_Data directory and named Sample.txt. **IMPORTANT: You will need to Exit this application before you can access this file.** 

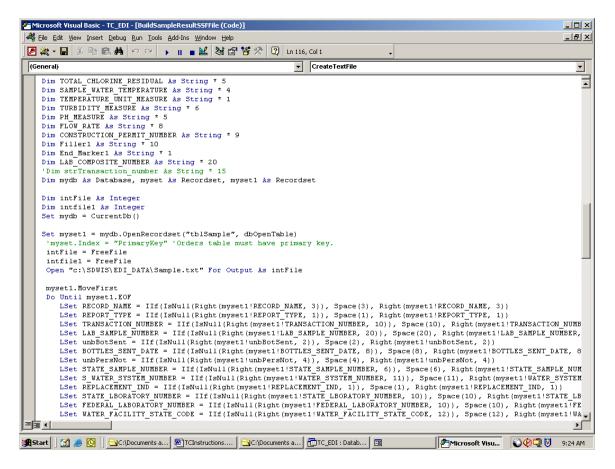
#### Exit Access.

This file must be moved or renamed. A new text file cannot be created if a file named Sample.txt exists in the folder. The naming convention we like to use is MMDDYYD1.txt (ie: 03312004D1.txt). If more than one file is sent for that same date, it should be called MMDDYYD2.txt, etc. Files containing corrections for previously submitted files should be named MMDDYYC1.txt, etc.

Note: If you want to change the location of where this file is created you will need to go into the Objects.Modules and select **BuildSampleResultsSSFFile** by double clicking on it. (Select Window > Unhide from the menu bar to view TC\_EDI:Database window)



About half way down you'll see the line of code that creates and places the text file in location C:\SDWIS\EDI\_DATA\Sample.txt. This line of code can be changed.



After you have created a text file but before you begin entering a new batch of samples, click **Copy Records to History and Delete Batch File**. This places the data in another table called tblActivity.

# INSTRUCTIONS FOR COLIFORM ENTRY SCREEN

Date: 10/31/2004 Rev: 10/31/2004

# INSTRUCTIONS FOR THE COLIFORM ENTRY SCREEN

The main objective of this database is to create a text file in the proper format for input into DWB's SDWIS EDI for Total Coliform Lab Samples. These text files are created by the Labs and sent to us via E-mail. Before the text file can be created the operator will first need to create a directory where the file gets placed. This directory will be C:\SDWIS\EDI\_Data and the file created will be automatically named Sample.txt. It is necessary that after the file is created and MSACCESS is CLOSED, the operator should rename this file to the proper naming convention of MMDDYYd1.txt (example: 08/22/2004D1.txt).

• CLICK on the TC\_EDI Application and the menu for TC SAMPLES will appear.

*Optional*: To have the Database Window appear, CLICK Windows, Unhide, and OK. This will allow the user to examine the table structures, queries, form, macro, and modules within the application.

TO SET DEFAULTS for Lab ID Number: (this may already have been defaulted to your Lab certification number.)

- CLICK SET DEFAULTS
- CLICK Set Lab Certification Default

Enter the ID of a particular Lab (example: 00039) and PRESS the ENTER KEY *twice* or CLICK the Set Default button *twice*.

A box appears indicating "The default value has been changed in form."

- CLICK OK.
- CLICK the X box to close.

#### TO SET DEFAULTS for a Total Coliform Result Method:

- CLICK SET DEFAULTS
- CLICK Set Method Default

TYPE the Method being used (example: 303 for Membrane Filter or 309 for Colilert – Presence/Absence) and PRESS the ENTER KEY *twice*.

#### OR

CLICK the drop down arrow button to select the method from the list. *It is suggested to use the drop down arrow buttons whenever available to prevent typing errors.* 

CLICK the appropriate Method.

CLICK Set Default or PRESS the ENTER KEY twice.

A box appears indicating "The default value has been changed in form."

- CLICK OK.
- CLICK the X box to Close

#### TO SET DEFAULTS for a Fecal Result Method:

- CLICK SET DEFAULTS
- CLICK Set Fecal Method Default

Enter the Method being used (example: 321 for EC MUG Presence/Absence or 309 for Colilert – Presence/Absence) and PRESS the ENTER KEY *twice*. *See chart attached*. **OR** 

CLICK the drop down arrow button to select the fecal method from the list.

CLICK the appropriate Fecal Method.

CLICK Set Default or PRESS the ENTER KEY twice.

A box appears indicating "The default value has been changed in form."

- CLICK OK.
- CLICK the X box to Close.

#### TO ENTER SAMPLES and their RESULTS

• CLICK the box to Enter New Sample Data or View Batch File.

#### ENTER LAB SAMPLE INFORMATION

- ENTER the facility number <u>only</u>. "KY" preceding the number is NOT to be entered here. To select a PWS, CLICK the drop down arrow button just to the right of the PWSID box and then CLICK the selected PWSID number from the list. TAB to the next field.
- ENTER the Compliance Period Begin Date in the MMDDYYYY format. TAB to the next field.
- ENTER the Compliance Period End Date in the MMDDYYYY format. TAB to the next field.
- ENTER the Received in Lab Date in the MMDDYYYY format. TAB to the next field.
- ENTER the Time Analyzed in the format HHMM (24 hour time) TAB to the next field.
- ENTER the Date Collected in the MMDDYYYY format.
- ENTER the Sample Collector in Last Name, comma, space, and First Name format. Example: SMITH, JOHN. TAB to the next field.

Note: this field is not required but can be used at the lab's discretion.

Adding names to your Collector Table for this facility can also be done. Do this *before* typing in the name in the Collector Box by Clicking on the <u>Add Name Button and typing</u> in the Collector's Name (Last Name, First Name) and Click Close. The name will now appear when clicking on the drop down arrow button and can now be selected.

• TYPE in the correct sample purpose (Example: ROUTINE). The sample purpose list will appear by clicking on the down arrow button and selecting the correct purpose by clicking on the description of the sample purpose. NOTE: If a Repeat or Replacement is chosen, the Original Lab Sample Number is required to be entered and a box will appear for this entry. Also, on Repeats, the Location Indicator (Original, Downstream, Upstream, or Other) will also be required and a box will appear for this entry. TAB to the next field.

#### YOU ARE NOW READY TO ENTER THE SAMPLE RESULT INFORMATION.

- ENTER the Point (Sampling Point) or CLICK the drop down arrow button to select a sampling point. If the sampling point is not among the list one may be ADDED. To ADD a sampling point, CLICK the Add/Edit Point Button and enter the correct information and click CLOSE. The new added point may now be selected from the list. TAB to the Type Field.
  - **A SAMPLING POINT IS REQUIRED!** The Sampling Point must also exist in DWB's database or the sample will be rejected. If you add a new sampling point to your TC\_EDI database please ensure that the system sampling site plan has been updated with DWB.
- ENTER the Collection Time in the HHMM (24 hour time) format. TAB to the next field.
- ENTER a number value for FREE CHLORINE RESIDUAL, if present. This value will be in format of 99.99. If value is not present, leave BLANK. TAB to the next field.
- ENTER a number value for TOTAL CHLORINE RESIDUAL, if present. This value will be in format of 99.99. If value is not present, leave BLANK. TAB to the next field.
- COL READ: ENTER a Colony Count ONLY if greater than zero or leave BLANK. TAB to the next field. For INVALID SAMPLES you would have a colony count of greater than 201 and Total Coli as negative, this will automatically populate the opinion with an "I" for Invalid. You may also enter TNTC or CNFG in the COL READ field. Note that if you enter a number greater than 200, the value will automatically change to TNTC.
- TOTAL COLI: ENTER a value of either A or N, to indicate absence/negative result and a P to indicate presence/positive result in the TOTAL COLI field. Note: If an N is entered, the value changes to an A and the Opinion field received a value based on this entry.
- <u>FECAL COLI</u>: This field is only used when a TOTAL COLI is positive. If Total Coli is positive, ENTER a value of either A or N to indicate a FECAL COLI is absent/negative and a P to indicate presence/positive. This field should be left BLANK if the TOTAL COLI field is an A OR N indicating a negative result. TAB to the next field.
- SAMPLE NUMBER: ENTER a Lab Sample Number. Note: this field may not exceed a length of 20 but shorter lab numbers can simplify entry. TAB to the next field.
- METHOD: ENTER a Method, if other than the default value already showing. TAB to the next field.
- FECAL METHOD: ENTER a Fecal Method if Fecal Coli is valued, otherwise, this field should be left BLANK. If this field has a defaulted value present and NO Fecal Coli is entered, the value may be ignored as the value will not actually be used in this case. TAB to the next field.

- REPORTED BY ANALYST: (This field is for the Labs information only, DWB does not require this information). ENTER information or TAB to the next field.
- DATE: ENTER the (Analysis Completion) Date in the MMDDYYYY format. TAB to the next field.
- LABORATORY CERT NO: This field should already be defaulted to a specific Lab Number (example: 00039). TAB to the next field.
- PERSON NOTIFIED: (This field is for the Labs information only, DWB does not require this information).
   If information is available, ENTER information in the <u>Person Notified</u> field. TAB to the next field.
- DATE: The date the person was notified. (This field is for the Labs information only, DWB does not require this information).
  If information is available, ENTER information in the <u>Date</u> field. TAB to the next field.
- NO. BOTTLES SENT: (This field is for the Labs information only, DWB does not require this information). If information is available, ENTER information in the <u>No.</u> <u>Bottles Sent</u> field. TAB to the next field.
- REASON FOR REPLACEMENT: The Reason for Replacement field is ONLY used with REJECTED SAMPLES, (eg. Broken Bottle, Lab Error, etc.) otherwise this field should be left BLANK. IF the sample is a rejected sample, CLICK the drop down arrow button and select the reason for rejection. No results record will be recorded for REJECTED SAMPLES. Labs do not have to report REJECTED SAMPLES unless they find it necessary for their record keeping.

WHEN ALL SAMPLE RESULTS HAVE BEEN SUCCESSFULLY ENTERED ON THE SCREEN, PRESS ONE OF THE THREE (3) BUTTONS AT THE BOTTOM OF THE SCREEN. <u>DO NOT</u> click any of the three buttons more than once with the same sample on the screen or a duplicate record for that sample will get created. If a mistake is known after a button is already clicked, the record cannot be changed unless you change it in the tables (tblsample or tblresults) before the text file is created. An exception to clicking a button more than once might be when the Reason For Replacement field is used.

#### WHICH BUTTON TO USE?

• If multiple sample results are on the same form for one PWS and more sample/results need to be entered, CLICK <u>Another Sample - Same Form</u>. This will prevent the operator from re-entering many of fields in the top part of the form. If ALL samples have been entered on the form for that PWSID number, CLICK on <u>New Lab Form</u>. If the *last* sample/result information has been entered for the batch or prior to leaving the database, CLICK <u>Process Current Record</u> prior to CLICKING the Close button.

#### CREATE TEXT FILE FOR DWB FROM BATCH FILE

• When the batch is complete and ready to send to DWB, CLICK <u>Create Text file for DWB from Batch File</u>. This will create a text file on the users hard drive (C:\) under the directory SDWIS and sub directory EDI\_DATA. **IMPORTANT: the user will need to set up these directories prior to executing this step.** This file is automatically named "Sample.txt" and should be renamed prior to sending to DWB. DWB's naming convention for this file is MMDDYYd1.txt (example: 072199d1.txt). The "d1" will change to a d2, d3, d4, etc. for multiple files sent on the same date. Also, c1, c2, c3, etc. will be used IF the file sent is a correction of a previous file.

#### COPY RECORDS TO HISTORY AND DELETE BATCH FILE

• Prior to starting a new batch, CLICK Copy Records to History and Delete Batch File.

#### **VIEW HISTORY FILE**

All records sent to DWB may be viewed by CLICKING on <u>View History File</u>. If a sample has been noted to be rejected after sending to DWB, this sample can be retrieved into the batch file by first locating the record and then CLICKING the button RETURN TO BATCH FILE. This record is now removed from the history and returned to the batch file for editing.

#### RETURNING RECORDS FROM HISTORY

• Click on <u>View History File</u>. When the history screen appears, click in the Lab Sample # field. Press the CTRL key and the "F" key simultaneously. A Find in Field Dialog Box will appear, enter the sample number you wish to retrieve and press ENTER. The sample record should appear on your screen if the record is on file. Close the dialog box by clicking the CLOSE command button. Click the Return to Batch File button. Another dialog box will appear indicating the Record has been retrieved, Click OK. If additional samples need to be retrieved, continue this procedure until done. Click the CLOSE when done. Note: It is advisable to empty or delete the batch file prior to returning records. The resulting text file will be submitted as a correction file and should contain only corrected records.

#### "You're not done yet"

Click on the <u>Enter New Sample Data</u> from the TC SAMPLE Main Menu screen. Make your corrections and Press <u>Process Current Record</u>. If multiple samples were retrieved, use the navigational buttons at the left-hand bottom of your screen to move to the next record. Make your corrections and Press <u>Process Current Record again</u>. Click Close when done. (*Use the naming convention for correction files*.)

Note: Your database will be compacted each time it's closed.

# **ANALYTE – METHOD CODES**

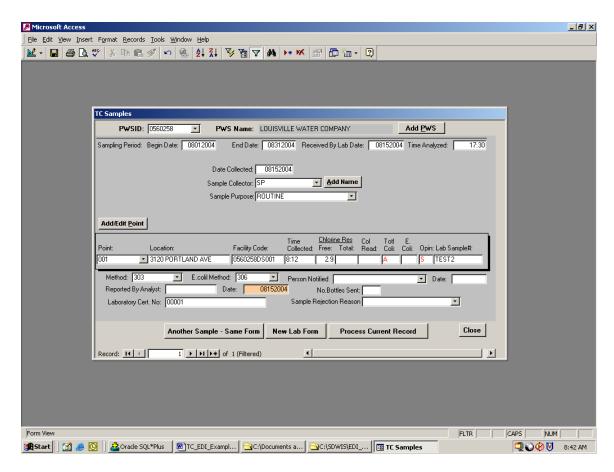
## TOTAL COLIFORM RESULT METHODS

303	_	Membrane Filter mEndo	9222B
306	-	Colilert-MPN	9223B-MPN
309	_	Colilert-Presence/Abse	ence 9223B-PA
316	-	Colisure-Presence/Abse	ence 9223B-PA
317	_	Colisure-MPN	9233B-MPN
318	-	Membrane Filter-mColi	3lue24 9222B
319	_	Membrane Filter-Colisc	can 9222B
326	_	Membrane Filter-MI Med	dium EPA1604
327	_	Membrane Filter-Chromo	ocult 9222B
328	_	Readycult-PA	9223B-PA

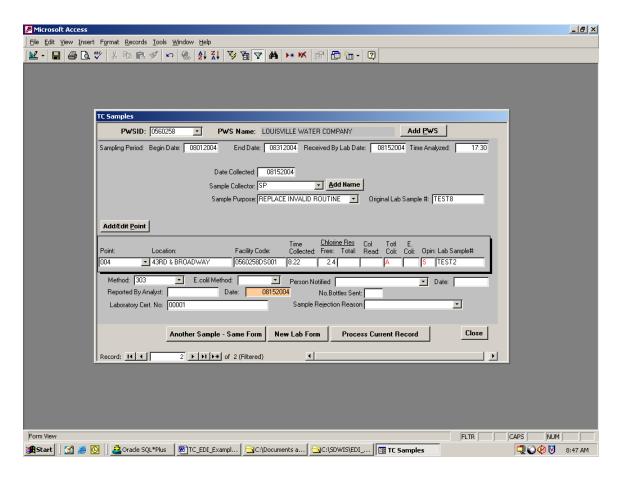
### FECAL RESULT METHODS

322	_	NA-MUG	9222G
306	_	Colilert-MPN	9223B-MPN
309	_	Colilert-Presence/Absence	9223B-PA
316	_	Colisure-Presence/Absence	9223B-PA
317	_	Colisure-MPN	9223B-MPN
318	_	Membrane Filter-mColiBlue24	9222B
319	_	Membrane Filter-Coliscan	9222B
326	_	Membrane Filter-MI Medium	EPA1604
327	_	Membrane Filter-Chromocult	9222B
328	_	Readycult-PA	9223B-PA
321	-	EC MUG-Presence/Absence	9221F-PA

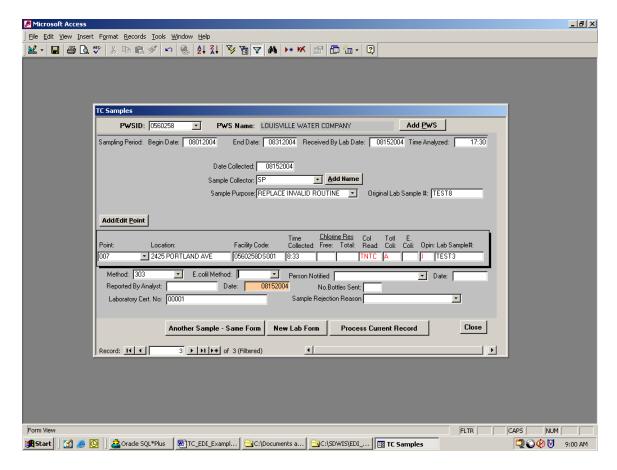
# **EXAMPLES**



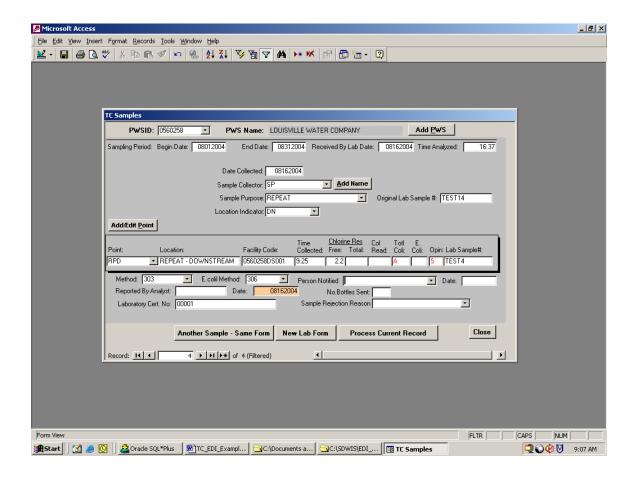
This is an example of the way a Lab would enter a Routine Sample. Probably over 90% of their samples are of this type.



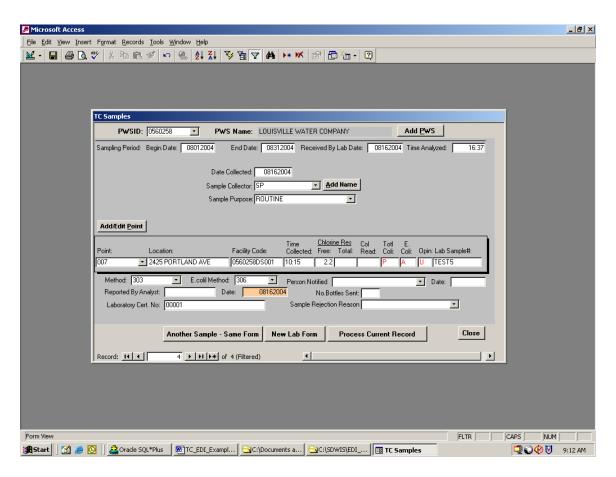
This is an example of the way the Lab would enter a Replacement for an Invalid Routine (in this case they DO have to associate the sample back to it's original sample number).



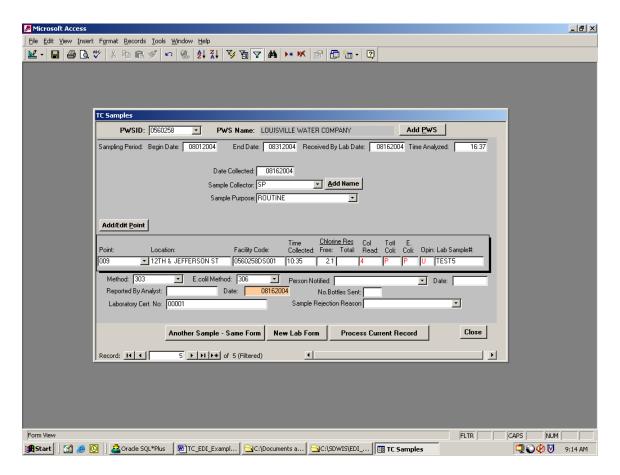
Another example of the way the Lab would enter a Replacement for an Invalid Routine (in this case they DO have to associate the sample back to it's original sample number). This Replacement is also considered an INVALID SAMPLE because Colonies Read are Too Numerous To Count . You need to enter a number greater than 201 and the "TNTC" will pop in and then enter "A" and the "I" will pop in. You can also enter "TNTC" or "CNFG" instead of a number. The program will remove the "A" from the text file when one of the three command buttons are clicked.



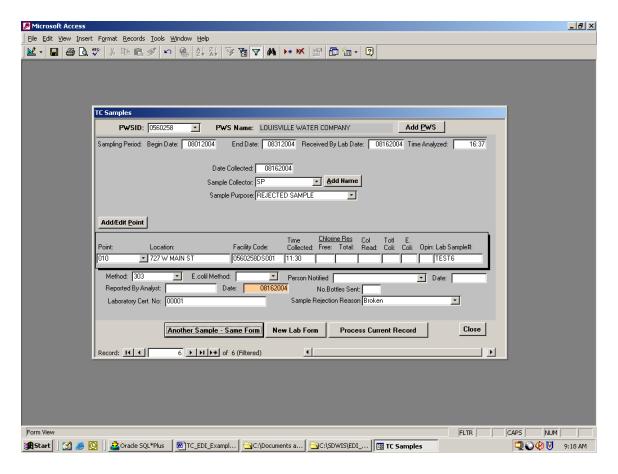
This is an example of how to enter a Repeat Sample. In this case both the Location Indicator and Original Sample Number are required. Note that since this is a Repeat taken at the Downstream location, the generic downstream repeat Sampling Point RDP is used. For an Upstream sample, the RDU Sampling Point would be used.



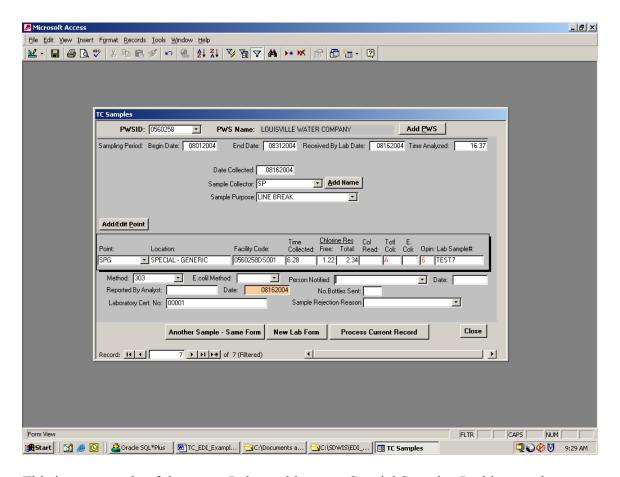
Positive sample and a negative E.coli result. This sample would require collection of three repeat samples.



Positive with a positive E.coli. You may or may not have Colony Counts on your result and a "TNTC" will appear if you enter a count greater than 200. This sample would require the collection of three Repeat Samples.



This is an example of how to enter a sample that actually doesn't get results, in this case do to the fact that it broke in the lab. Labs do not have to report these unless they find it necessary for their record keeping.



This is an example of the way a Lab would enter a Special Sample. In this case the sample was collected due to a line break. Note that the Sampling Point is "SPG". Special Samples are not considered for compliance purposes and are typically collected from Sampling Points that do not exist in DWB's database. Use of the "SPG" designation will allow Special Samples to be accepted in the database.